

## **ABSTRACT**

An erythema meter includes a probe, a light source of one or more specific probing and reference wavelengths, and an acoustic detector which determines the level of erythema present in the dental pulp chamber of a tooth. The probing and reference wavelengths are delivered in pulsed or amplitude modulated fashion through the probe, thereby permitting electronic identification and filtering of the received data. The absorption of the light wave raises the temperature of the material in the tooth and causes it to expand, thus creating tiny shockwaves which are picked up with the acoustic detector, revealing information on the location of blood and the quantity of blood inside the tooth. The erythema meter accurately measures the erythema, or inflammation, within the tooth in a qualitative and quantitative manner.